

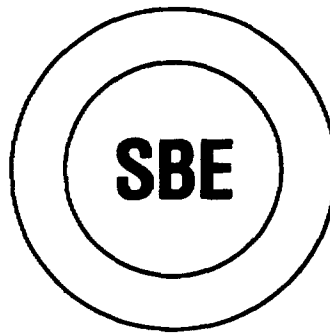
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FEDERAL COMMUNICATIONS COMMISSION
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**Comments of the
Society of Broadcast Engineers, Inc.**

**RM _____
TIA Petition to Allow
Digital Modulation in the
2, 2.5, 7 and 13 GHz BAS Bands,
Plus Other Changes**



November 16, 1998

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SOCIETY OF BROADCAST ENGINEERS, INC.
Indianapolis, Indiana

SBE Comments in Support of TIA Petition for Rulemaking

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of)
)
Amendment of Parts 25, 74, 78, 90,)
and 101 of the Commission's Rules to)
Facilitate Fixed Point-to-Point Terrestrial)
Microwave Radio Service Licensee Use)
of the 23 GHz and 10 GHz Bands and to)
Eliminate Certain Inconsistencies in)
Such Rules)

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FEDERAL COMMUNICATIONS COMMISSION
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To: The Commission

Comments of the Society of Broadcast Engineers, Inc.

The Society of Broadcast Engineers, Incorporated (SBE), the national association of broadcast engineers and technical communications professionals, with more than 5,000 members in the United States, hereby respectfully submits its comments in support of the above-captioned Petition for Rulemaking proposing to allow digital modulation in the 2, 2.5, 7 and 13 GHz Television Broadcast Auxiliary Service ("TV BAS") microwave bands, and other changes.

I. SBE Supports Certain Aspects of TIA Petition and Urges Prompt Action

1. On March 6, 1998, the Fixed Point-to-Point Communications Section of the Wireless Communications Division of the Telecommunications Industry Association ("TIA") filed a Petition for Rulemaking proposing to make certain changes in the rules governing fixed point-to-point microwave stations operating under Parts 25, 74, 78, 90 and 101 of the FCC Rules ("TIA Petition"). Included in the TIA Petition is the proposal to allow digital modulation by TV BAS stations in the 2, 2.5, 7 and 13 bands (currently Section 74.637(c) of the FCC Rules only allows digital modulation in the 6.5, 18 and 31 GHz TV BAS bands).¹ The TIA Petition also proposes to modify² the minimum path length equivalent isotropic radiated power ("EIRP") limit of Section 74.644 to eliminate the step-function 25 dB reduction in the allowable EIRP, and to substitute a gradual reduction formula, similar to that used in the Private Operational Fixed Service ("POFS") and Common Carrier rules; that is, the formula

¹ TIA Petition, at Page A27 and Pages B3/4.

² TIA Petition, at Pages A28/29 and Pages B5/6.

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$$\text{EIRP}_{\text{max}} = 55 - 40\log(A/B)$$

would be substituted for the present Section 74.644 formula,

$$\text{EIRP}_{\text{max}} = 30 - 20\log(A/B)$$

where

EIRP_{max} = maximum allowable EIRP in dBW for paths shorter than 17 kilometers at 2, 2.5, or 7 GHz, or shorter than 5 kilometers at 13 GHz

A = minimum path length requirement in kilometers: 17 km at 2, 2.5, and 7 GHz; 5 km at 13 GHz

B = actual path length in kilometers

2. To the best of SBE's knowledge, no action has yet been taken on the TIA Petition. Because of the need for TV stations to expand their studio-to-transmitter link ("STL") capability to accommodate the station's digital television ("DTV") channel, the TV BAS Rules need to be promptly amended to allow digital modulation, or a combination of both analog and digital modulation, especially for the 7 and 13 GHz TV BAS bands. Indeed, several manufacturers of TV BAS microwave radios are currently offering such radios for the 7 GHz TV BAS band, even though the Rules do not allow digital modulation in that band and FCC Type Acceptance or Notification appears to have not yet been obtained. It is clear that an inability for a TV station to relay its digital signal from its studio to its DTV transmitter site must negatively impact the roll out of the DTV service.

3. SBE therefore urges the Commission to immediately proceed with the TIA Petition, so that parties can comment on the proposal and the rulemaking can be brought to completion. SBE expects that in the near future several, if not all, of the microwave radio equipment manufacturers will have derived the necessary desired-to-undesired ("D/U") ratios for digitally-modulated or for hybrid, digitally and analog modulated radios; the necessary ratios for adjacent-channel stations will most likely be more rigorous than now possible for adjacent-channel analog radios (typically 0 dB D/U) because of the significantly higher bandwidth occupancy of a digitally modulated or combined analog and digitally modulated radio compared to the effective bandwidth of conventional FM video analog radios. It is, of course, imperative that TV stations planning to modify their analog STL to a digitally modulated STL or to a combined analog + digital STL know what D/U ratios are necessary to protect co-channel and adjacent-channel links, and then to check that those D/U ratios would,

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if fact, be provided to those other stations. It is also in the interest of stations planning to modify their STL to also know what co-channel and adjacent-channel D/U ratios their new receiver will need to see from existing analog links, to ensure that the modified path does not receive interference. The prompt issuance of a NPRM would assuredly provide the catalyst for the several manufacturers of TV BAS radios to finally derive and publish these as yet unavailable ratios.

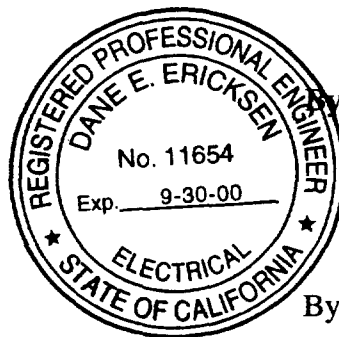
II. Summary

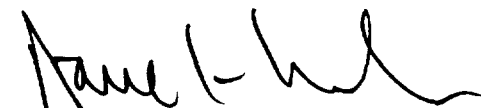
4. SBE supports at least two aspects of the March 6, 1998, TIA Petition for Rulemaking, and urges the Commission to immediately proceed with a Notice of Proposed Rulemaking ("NPRM") in response to the TIA filing.

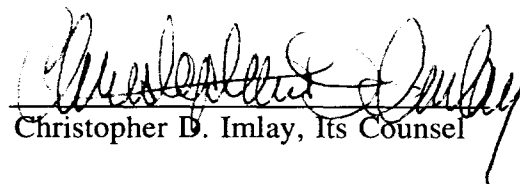
Respectfully submitted,

Society of Broadcast Engineers, Inc.

By 
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Dane E. Ericksen, P.E., CSTRE
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By 
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November 16, 1998

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